

Claims

1. (currently amended) A method of producing heat energy, comprising the steps of:
providing a container for receiving an electrolyte composition, a cathode and an anode;
forming an electrolyte composition comprising D₂O and [an ionizable acid] sulfuric acid;
placing a sufficient amount of the electrolyte composition in the container to at least
partially cover a cathode made from a metal selected from the group consisting of [nonhydride
forming metals] palladium, platinum and titanium and to at least partially cover an inert anode
situated inside the container;
connecting the cathode and anode to a source of electricity; and
applying a [voltage] current density across the cathode and anode of at least 0.55A/cm².

Claim 2 (canceled).

3. (original) The method of claim 1 wherein the electrolyte during the application of
voltage is held within a container and wherein said container bounds a space above the
electrolyte, said space providing a region for the recombining of gases produced during the
electrolysis.

4. (original) The method of claim 1 wherein a catalyst is provided within said region
catalyzing the recombining of gases produced by the electrolysis.

5. (original) The method according to claim 1 wherein the cathode is made from
palladium.

6. (original) The method according to claim 5 wherein the size of the cathode is about 1
cm².

7. (original) The method according to claim 1 wherein the cathode is made from
titanium.

8. (original) The method according to claim 1 wherein the inert anode is a platinum anode.

9. (original) The method according to claim 1 wherein the electrolyte composition consists essentially of D₂O and about 15% sulfuric acid by volume.

10. (original) The method according to claim 9 wherein the cathode is made from palladium or titanium.

11. (original) A method of producing heat energy, comprising the steps of:
providing a container for receiving an electrolyte composition, a cathode and an anode;
forming an electrolyte composition comprising D₂O and sulfuric acid;
placing a sufficient amount of the electrolyte composition in a container to at least partially cover a cathode made from a metal selected from the group consisting of nonhydride forming metals and to at least partially cover an inert anode situated inside the container;
connecting said cathode and anode to a source of electricity; and
applying a voltage of about 3.5 volts across the cathode and anode.

12. (original) A method of producing heat energy, comprising the steps of:
providing a container for receiving an electrolyte composition, a cathode and an anode;
forming an electrolyte composition consisting essentially of D₂O and 15% by volume sulfuric acid;
placing a sufficient amount of the electrolyte composition in a container to at least partially cover a palladium or titanium cathode and an inert anode situated inside the container, wherein the container bounds a space above said electrolyte composition;
connecting said cathode and anode to a source of electricity;
applying a voltage across the cathode and anode; and
providing a catalyst within the space above the electrolyte composition to catalyze the recombination of gases produced by the electrolyte.